

REMARKS

In the Official Action mailed on September 7, 2005, the Examiner rejected claims 1 – 37.

5 The Examiner objected to the drawings, under 37 CFR 1.83(a) because the “means for measuring voltage a distance from the housing must be shown”. Applicant respectfully contends that the components associated with the measuring step of the subject invention are adequately illustrated and described in detail in the subject patent application. For example, in the discussion of United States Patent 4,322,633, the components associated with the measuring of
10 the voltage at a preselected distance from the component to be protected is described, beginning at line 20 of page 11, as follows:

“As illustrated in United States Patent 4,322,633, **the anode 30 and the reference electrode 34 are typically attached to the transom**, such as the transom 14 illustrated in Figure 1. They are **placed at a preselected distance**
15 from the component which is to be protected, such as the housing structure 16 of the marine propulsion system 12.” (Emphasis added).

Applicant respectfully points out for Examiner’s consideration that the voltage measuring techniques known to those skilled in the art are not significantly changed by the subject
20 invention. These measuring techniques include, for example, the attachment of a reference electrode 34 to the transom of a marine vessel. This reference electrode itself, since it is fixed in position on the transom at a preselected distance from the component to be protected, defines the location at which the voltage is measured. Applicant respectfully directs Examiner’s attention to Figure 1 of United States Patent 4,322,633 (which is incorporated by reference in the subject
25 patent application). It shows the position of the reference electrode (reference numeral 37) and its connection to the controller (reference numeral 29). This technique for monitoring the effective voltage at the preselected location, where the electrode is attached, is very well known to those skilled in the art. This method for measuring the voltage is further described in the subject patent application, beginning at line 16 of page 8, where it states:

30 “United States Patent 4,322,633, which is described above, provides a detailed explanation of the way in which a marine cathodic protection system is used to provide an anode that inhibits galvanic corrosion of the housing structure 16 and other components. As described in United States Patent 4,322,633, **a reference electrode is used to measure the effectiveness of the cathodic protection system**.” (Emphasis added)
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The subject patent application, as cited immediately above, again describes the use of the reference electrode of the prior art and the fact that it is used to measure the effectiveness of the cathodic protection system. Again, applicant respectfully directs Examiner's attention to the fact that the measurement of a voltage at a preselected distance from the component to be protected by a reference electrode, such as that identified by reference numeral 34 in the subject patent application, is well known. In further describing the method for measuring the voltage at the preselected distance from the component to be protected, beginning at line 26 of page 8, the subject patent application states:

“The purpose of the schematic representation in Figure 2 is to allow the present invention to be later compared to the known methods of providing a cathodic protection system. **In Figure 2**, the marine propulsion system 12 is protected by an anode 30 which is, in turn, controlled by **a controller 32 that uses a reference electrode 34 to measure the effectiveness of the anode 30** with respect to the housing structure 16 of the marine propulsion system 12.” (Emphasis added)

The relationship between the controller 32 and the reference electrode 34 are described in the citation from the subject patent application shown immediately above in terms of their cooperation in measuring the effectiveness of the anode 30 which is simply another way of stating that they cooperate with each other to measure the voltage at the preselected distance from the component to be protected, which is the aluminum housing 16 of the marine propulsion system.

Applicant respectfully directs Examiner's attention to Figures 2 and 3 of the subject patent application. The reference electrode 34 is shown in both the prior art system of Figure 2 and the subject invention in Figure 3. In addition, the controller 32 is shown in both Figures 2 and 3 being connected to the reference electrode 34. Since the reference electrode 34 is described specifically as being attached to a transom 14 of a marine vessel at a preselected distance for the purpose of measuring the voltage at that preselected distance and the reference electrode 34 is described as being associated with the controller 32 to measure the voltage at that preselected distance, applicant respectfully contends that the “means for measuring” has been adequately described in the subject patent application and illustrated in its figures. In addition, these components are well known to those skilled in the art and described in detail in United States Patent 4,322,633 which is incorporated by reference in the subject patent application, described in the specification of the subject patent application, and used as a basis for the

discussion of the controller 32 and reference electrode 34 which are illustrated in Figures 2 and 3 of the subject patent application.

As described above, the voltage measuring step of the subject patent application is not the primary feature on which it depends on novelty and non-obviousness. Simply stated, the novel and non-obvious characteristic of the subject patent application is that it replaces the conventional anode 30, described in conjunction with Figure 2, with the entire surface of the housing 16 of the marine propulsion system 12. This novel and non-obvious method is described in detail throughout the subject patent application. As an example, beginning at line 3 of page 10, it states:

“**The controller 32, and its source of electrical power, is connected in electrical communication with the housing structure 16 of the marine propulsion system 12.** The outer surface of the housing structure 16 is coated with an electrically conductive coating which will be described in greater detail below. This electrically conductive coating **replaces the standard anode 30 described above in conjunction with Figure 2.** Instead of using an anode 30 which is attached to the transom of a marine vessel, **the electrically conductive coating is used as an anode with a much increased surface area. This enhances the effectiveness of the cathodic protection system.**” (Emphasis added)

By using the outer surface of the housing structure 16 to replace the standard anode 30, the effective anode surface is significantly increased. This significantly improves the effectiveness of the overall cathodic protection system. This simply, but accurately, describes the novel and non-obvious characteristics of the subject invention. It replaces the standard anode, identified by reference numeral 30 in Figure 2 and described in detail in United States Patent 4,322,633 (identified by reference numeral 27) with a much larger surface area that is also much closer to the propeller 26, as described in conjunction with Figures 2 and 3 and in association with reference numerals 40 and 42.

With respect to Examiner’s definition of a boat hull as a “housing structure”, applicant vigorously contends that this definition is improper and could only be made if the subject patent application is used as a guide to search the prior art for any marine structure that is connected electrically to a power source and used as an anode. Throughout the subject patent application, applicant has consistently defined this structure as a “housing structure 16 of the marine propulsion system 12.” It is illustrated in Figures 1 – 3 as the housing structure 16 which is external to the marine vessel and attached for support to its transom 14. Applicant further

contends that no person skilled in the art of marine propulsion systems would ever refer to the hull of a boat as a “housing structure of a marine propulsion system.” Notwithstanding applicant’s vigorous disagreement with Examiner’s definition of a boat hull as a “housing structure of a marine propulsion system”, applicant has elected to modify the claims of the subject patent application as described above. The housing structure of the marine propulsion system is now described as being adapted to be mounted for support on a transom of a marine vessel. Applicant respectfully contends that this definition of the housing structure clearly removes it from the possibility of being interpreted as a hull of a marine vessel. It would be completely illogical to interpret the hull of a marine vessel as being capable of being adapted to be mounted for support on a transom of that same marine vessel. Claims 1, 14 and 29 have been amended to define the housing structure of the marine propulsion system in this way.

Although applicant respectfully believes that Examiner is fully aware that housings for marine propulsion systems, of the type described in the subject patent application, are mounted on the transom of a marine vessel, as illustrated in Figure 1 of the subject patent application, applicant points out for Examiner’s consideration that this relationship is explicitly described in the subject patent application beginning at line 9 of page 8, where it states:

“Figure 1 illustrates a marine vessel 10 with **a sterndrive marine propulsion system 12 attached to its transom 14**. Sterndrive systems are well known to those skilled in the art. The **marine propulsion system 12 comprises a housing 16** which includes a gear case 18, a skeg 20, a drive shaft housing 22 and a propeller 26 that is supported for rotation about a generally horizontal propeller axis by a propeller shaft which is connected in torque transmitting relation with the drive shaft **enclosed within the housing 16**.” (Emphasis added)

In the citation from the subject patent application, shown immediately above, the sterndrive marine propulsion system 12, which includes the housing 16, is shown attached to the transom 14 in the manner that is well known to those skilled in the art.

The Examiner also pointed out that claim 9 contained terminology that did not have antecedent basis. In order to correct this, applicant has changed claim 9 to be dependent on claim 4 rather than on claim 1 as originally filed.

Applicant again respectfully directs Examiner’s attention to the fact that the subject invention uses the actual housing of a marine propulsion device as an anode by providing an electrically conductive coating on that housing. Applicant respectfully contends that no marine propulsion device known to those skilled in the art has been provided with an electrically

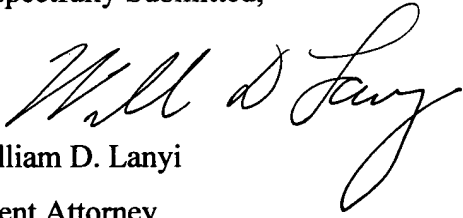
conductive coating which could allow it to be used as an anode. In fact, applicant is unaware of any known marine propulsion system that has used, or is capable of using, the housing structure of the marine propulsion system itself as an anode in a galvanic circuit. Known housing structures for marine propulsion systems are typically coated with a paint which is not
5 electrically conductive to any degree which would allow it to function as an anode in a galvanic circuit. Examiner's reference to conductive boat hulls is clearly inappropriate for several reasons. First of all, the cited systems that use conductive hulls are not intended to provide galvanic protection to any components of the marine propulsion system. Instead, these systems, such as described in United States Patent 6,209,472, are used to inhibit fouling of the boat hull
10 itself. Furthermore, as discussed above, a hull of a boat is not properly defined as a "housing structure of a marine propulsion system." In addition, systems such as the one described in United States Patent 6,209,472, intentionally create one half of the hull as an anode and the other half as a cathode. Then, these conditions are subsequently reversed.

As such, it clearly teaches away from any system that would result in a "metallic
15 component" being made to act as a cathode in the galvanic circuit. This metallic component, which is identified as a propeller in the claims of the subject patent application, would be insignificant in the galvanic circuit because of the relative surface areas of the propeller in comparison to the much larger half of the hull which is competing as a cathode in the galvanic circuit. Systems that are intended to inhibit fouling of an underwater surface, such as U.S. Patent
20 6,209,472, are clearly non-analogous to the subject invention and their use in rejecting the claims of the subject patent application are clearly improper.

Applicant intends to provide formal drawings after receipt of the Notice of Allowance to replace the originally filed drawings which, although determined by the Examiner to be suitable for prosecution, are informal.

25 In view of the changes made to the claims of the subject patent application and in further view of the above discussion, applicant respectfully requests Examiner's reconsideration of the subject patent application and expeditious allowance of claims 1 – 37.

Respectfully Submitted,



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